

ACCESSION #: 9607230255

LICENSEE EVENT REPORT (LER)

FACILITY NAME: MONTICELLO NUCLEAR GENERATING PLANT PAGE: 1 OF 4

DOCKET NUMBER: 05000263

TITLE: Reactor Scram Resulting From Electrical Short in the

Generator Condition Monitor

EVENT DATE: 06/15/96 LER #: 96-007-00 REPORT DATE: 07/12/96

OTHER FACILITIES INVOLVED: DOCKET NO: 05000

OPERATING MODE: N POWER LEVEL: 55%

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR SECTION:

50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:

NAME: Tom Parker TELEPHONE: (612) 295-1014

COMPONENT FAILURE DESCRIPTION:

CAUSE: SYSTEM: COMPONENT: MANUFACTURER:

REPORTABLE NPRDS:

SUPPLEMENTAL REPORT EXPECTED: NO

ABSTRACT:

While investigating a suspected faulty light bulb, an operator shorted the 120 VAC bulb lead to ground. This fault was not isolated locally but isolated by an upstream fuse which de-energized additional equipment, including a protective relay in the turbine runback circuitry. This initiated a turbine runback. Operators properly reduced power, but a turbine trip occurred, followed by a reactor scram. The local fuse did not isolate the fault due to a wiring error during installation. The wiring error was corrected.

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Description

During operation at 55% power, the turbine building non-licensed operator energized the Generator Condition Monitor (EHS System Code: TK) per procedure. Normally, one of three indicating lights are illuminated on the monitor panel. In this case, none of the lights were illuminated.

Suspecting a faulty light bulb (EHS Component Code: IL), the operator investigated. The operator removed one light bulb assembly enough to determine that maintenance personnel would need to change the bulb. The operator reinserted the light bulb assembly into the panel. In doing this, the 120 VAC lead was inadvertently shorted to ground (see blowup on Figure).

Rather than being isolated by the Generator Condition Monitor 1 amp fuse, the upstream 10 amp fuse in the generator control panel blew. This de-energized circuitry which initiated an unnecessary turbine runback. A turbine trip occurs 3.5 minutes following the initiation of the runback circuitry, if generator stator amperes have not been reduced sufficiently. Licensed operators reduced recirculation pump flow to minimum and started to insert control rods to further reduce reactor power.

The turbine generator tripped 3.5 minutes later causing a reactor scram.

All systems performed as necessary.

The plant was running at 55%, due to concerns with the stator water

cooling pumps (see LER 96-006). This power was believed to be low enough that if a turbine runback occurred operators could prevent an unnecessary challenge to the reactor protection system.

Cause

The root cause of this event is improper installation wiring of the Generator Condition Monitor. The 1 amp fuse in the monitor should have isolated the short rather than the upstream 10 amp fuse in the generator control panel. In order to power the monitor, the 1 amp fused wire should have been connected to the plant 120 VAC supply wire and the other to the neutral wire. During installation in the late 70's, the wires were mistakenly reversed and the plant 120 VAC supply wire was connected to the unfused neutral wire (see Figure). This resulted in the 1 amp fuse being located in the neutral wire and no circuit protection was provided for shorts to ground.

Analysis of Reportability

This event is reportable per 10 CFR Part 50, Section 50.73(a)(2)(iv) since this event resulted in an automatic actuation of the reactor protection system.

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Safety Significance

This event challenged the reactor protection system. All safety systems performed properly.

Actions

Immediate Actions

The operators decreased reactor power by decreasing reactor recirculation pump speed and inserting control rods.

The reactor was shutdown by the automatic scram and operators properly responded maintaining the reactor in a safe condition at all times.

Corrective Actions

The Generator Condition Monitor was rewired.

Preventative Actions

This wiring error is an isolated event, and would not happen with the current design change process. No further action is required.

Engineering personnel will investigate the turbine runback feature to see if changes in the circuitry or operating procedures could increase the probability of preventing a reactor scram following a turbine runback.

Operations personnel will receive training on which indicating lights need to be changed by maintenance personnel.

Failed Component Identification -

None

Previous Similar Events

None.

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Figure omitted.

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Northern States Power Company

NSP

Monticello Nuclear Generating Plant

2807 West Hwy 75

Monticello, Minnesota 55362-9637

July 12 1996 10 CFR Part 50

Section 50.73

US Nuclear Regulatory Commission

Attn: Document Control Desk

Washington, DC 20555

MONTICELLO NUCLEAR GENERATING PLANT

Docket No. 50-263 License No. DPR-22

LER 96-007

Reactor Scram Resulting From Electrical Short in the Generator Condition

Monitor

The Licensee Event Report for this occurrence is attached. This report
contains no new NRC commitments.

Please contact Tom Parker at (612) 295-1014 if you require further
information.

William J Hill

Plant Manager

Monticello Nuclear Generating Plant

c: Regional Administrator - III NRC

Sr Resident Inspector, NRC

NRR Project Manager, NRC

State of Minnesota, Attn: Kris Sanda

Attachment

*** END OF DOCUMENT ***
